

through being produced posteriorly between the first and second nerves, on this middle portion is a black dot; below the blotch eight or nine very small, whitish spots, of which two, rather larger, lie close together near the anterior margin towards the apex, and two close to the posterior margin (some of these dots are sometimes obsolete); *membrane*, base and nerves black, between the nerves, posteriorly, yellowish-white, in each cell a more or less elongate and broad fuscous-black spot, generally also a small, white spot at the base of the inner three cells; exterior to the cells fuscous, on the outer margin black, with a large, triangular spot below the apex of the corium, and another smaller and round on the posterior margin. *Legs*: *thighs* yellow, posterior margin black, above and beneath a chain of black or brown spots, not extending to the apex; *tibiæ*, all with a broad, yellow ring before the black apex, first pair yellow, with a black line above, second and third pairs black, with a fine, scarcely perceptible, exterior, yellow line, third pair with fine, distant spines; *tarsi*, black, second joint yellow, third sometimes yellow at the base.

Length  $1\frac{3}{4}$  line.

In form nearest to *S. pallipes*, Fab., Fieb., but more elongate-oval. Distinguished from all its congeners by the peculiar, large, light blotch on the corium, the blackness of the second and third pairs of *tibiæ*, and the yellow annulus on all of them.

Differs a little as to the maculation of the elytra from Fieber's description, and also in size, which is given as two lines long, otherwise identical.

A single example in Dr. Power's collection, captured last spring at Hayling Island by Mr. H. Moncreaff; others taken in August, near Bournemouth, by Mr. E. Saunders. (See vol. vii, p. 157).

[To be continued.]

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NOTES ON CARABIDÆ, AND DESCRIPTIONS OF NEW SPECIES (No. 5).

BY H. W. BATES, F. Z. S.

Sub-fam. LACHNOPHORINÆ.

This group was instituted by Lacordaire in the first volume of his "Genera," but with inaccuracies which soon led to attempts to reform it. One of these inaccuracies was the incorporation of *Callistus* with the other (chiefly tropical) genera, a combination which this great Entomologist had adopted from Baron Chaudoir. This was corrected by Schaum, who also proposed the further improvement of removing the group from the vicinity of the *Bembidiinæ*, with which Lacordaire had placed it in close combination, and associating it with the *Odacanthinæ*. None of these authors seem to have noticed the condition of the anterior tarsi of the ♂, which, I think, finally disposes of some of the

doubts regarding the group. They have three joints slightly dilated, the 1st linear, the 2nd and 3rd sub-oval, and all furnished beneath with two rows of fine, ragged squamæ. This character effectually separates the group from both *Callistus* (which has brush-like soles to its ♂ fore tarsi, and has been therefore rightly placed with the *Chlæniinæ*), and the *Bembidiinæ*, which have, as is well known, two unequally dilated joints in the ♂. I have examined the ♂ tarsi in *Eudalia*, *Amphithasus*, *Anchonoderus*, and *Lachnophorus*. Schaum believed the group was closely allied to the *Odacanthinæ*, and that the connecting link was the curious *Selina Westermanni* of S. Eastern Africa. The discovery of a new genus in Australia, *Eudalia* (Casteln.), confirms, in a decided manner, the justness of this conception. *Eudalia*, in fact, has the greatest resemblance to certain species of *Anchonoderus* (sub-fam. *Lachnophorinæ*), but, at the same time, possesses some of the essential characters of the *Odacanthinæ*, especially the dorsal position of the lateral borders of the pronotum, which leave the convex flanks visible from above; it is, in fact, very closely allied to *Odacantha*. On the other hand, a new genus belonging to the present sub-family (*Amphithasus*, to be described presently) connects the group very clearly with the *Anchomeninæ*; and another new genus, which will be described in a future paper, has many of the characters and the general form of *Anchomenus*, with the trophi and truncated elytra of *Casnonia* (sub-fam. *Odacanthinæ*). Other links occur between the *Anchomeninæ* and *Coptoderinæ*, &c.\* In short, it is clear that many closely allied sub-families, hitherto included in that indefinable assemblage, *Truncatipennes*, are but modified *Anchomeninæ*, forming so many distinct branches from that same stem, and each specialized in its own separate direction. Such unequal ramification cannot be represented to the mind except by an imaginative effort, and hence probably the absence of attempts to establish a genealogical system of classification, instead of a unilinear one, condemned in theory by every Naturalist, and yet continually being attempted in practice.

The name of the group, *Anchonoderinæ*, was ill-chosen by Lacordaire, *Lachnophorus* being the more typical genus. In fact, it is doubtful if *Anchonoderus* can stand as a generic name. The characters which distinguish the sub-family are as follows:

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\* One of these singular forms is *Sphallax peryphoides*, from New Zealand, described by me in this Magazine (Vol. iv, p. 55), of which I have since seen a specimen in the British Museum, ticketed "*Actenonyx bembidioides*, White." The generic characters given by White are meaningless and misleading, although there is no doubt the two names refer to one and the same species. This curious little insect has the solid horny ligula of the *Helluoninæ*, but no other resemblance whatever to that group. It has the broad triangular mesothoracic epimera (and the facies) of the *Bembidiinæ*, but truncated elytra and thickish oval terminal joints to the palpi. Unless it be considered an anomalous form of the *Odacanthinæ*, it must form a distinct equivalent group, under the name of *Actenonyx*.—H. W. B.

*Labrum quadratum, antice truncatum. Palpi plus minusve pilosi, articulo ultimo elongato, apice angustato; plerumque fusiformi vel ovato, apice submembranaceo, abrupte acuminato. Ligula apice truncata, bisetosa, paraglossis angustis, ligulâ longioribus, apice liberis. Antennæ filiformes, articulis basalibus hirsutis, pubescentia densa ab articulo 3<sup>io</sup> vel 4<sup>to</sup> basi incipienti. Elytris apice haud sinuatis, obtuse rotundatis vel truncatis. Pedes omnino pubescentes, tarsi ♂ articulis tribus basalibus leviter dilatatis, angulis rotundatis, dense pilosis, plantis biserialim squamosis. Episterna mesothoracica angusta, parallela, coxas haud attingentia.*

SYNOPSIS GENERUM.

A. *Palporum articulus ultimus sub-linearis.*

*EUDALIA*, Casteln. *Corpus crebre punctatum, elytris oblique truncatis.*

*AMPHITHASUS*, n. g. *Corpus læve, elytris recte transversim truncatis.*

*ANCHONODERUS*, Reiche. *Corpus crebre punctatum, elytris apice rotundatis.*

A.A. *Palporum articulus ultimus fusiformis, apice acuminato.*

\* *Corpus supra punctatum.*

*LASIOCERA*, Dej. *Antennæ articulis nonnullis dilatatis, setis longissimis instructis.*

*LACHNOPHORUS*, Dej. *Antennæ simplices, dense pubescentes.*

\*\* *Corpus supra glabrum.*

*EUCÆRUS*, Leconte.

A.A.A. *Palporum articulus ultimus tumidus, apice abrupte acuminato.*

*CHALYBE*,\* Casteln. *Caput supra planatum, grosse punctatum.*

*EGA*, Casteln. *Caput supra convexum, læve, postice collo brevi constrictum.*

*SELINA*, Motschulsky. *Caput supra convexum, læve, postice collo elongato constrictum.*

The genus *Camptotoma* (Reiche), introduced by Lacordaire into the group, is unknown to me, and can scarcely, according to the characters given, belong to the *Lachnophorinæ*. *Stigmaphorus* (Motschulsky), is founded on species of *Lachnophorus*, without any differential character of the slightest value. *Eucærus* and *Eudalia* are here incorporated for the first time with this sub-family.

The great majority of the genera and species belong to the tropical and warm parts of America, from the Rio de la Plata to California. *Lasiocera* is peculiar to tropical and sub-tropical Africa and Asia; *Eudalia* occurs only in the hotter parts of Australia.

The *Lachnophorinæ* are insects below the medium size of the *Carabidæ*. In facies they (*Lachnophorus*, *Lasiocera*, *Chalybe*), resemble *Bembidiinæ* of the genus *Tachypus*, or (*Eudalia*, *Amphithasus*, *Anchono-*

\* *Nomen prius usitatum*, Lepid., Duponchel, 1836.—Eds.

derus), the true *Anchomeni*, e. g., *A. albipes* and *oblongus*; but the extreme forms of *Ega* and *Selina* remind one rather of *Anthici* or ants. They inhabit moist situations, running nimbly over muddy edges of pools or about the roots of herbage.

#### Genus EUDALIA.

Castelnau, Trans. Roy. Soc. Victoria, pt. ii, vol. viii, p. 102.

The author of the genus gives scarcely any characters, and places it in the sub-family *Otenodactylinæ*, from which the distinctly truncated elytra distinguish it. On dissection, I find the ligula rather short, triangular, with two long setæ on its straight upper edge, besides a short one at the angles, which are rectangular; the paraglossæ are quite free from the upper part of the sides, narrow, and incurved. The mentum is broad, with a very broad simple tooth in the middle, much shorter than the wings, which are externally rounded. The palpi have the terminal joints very nearly cylindrical, in the labial less so than in the maxillary, in which latter they equal in length the preceding. The maxillæ are strongly hooked and densely spinose within. The surface of the body is punctulated, and, with the legs, clothed with short pale pubescence, as in *Lachnophorus*; the slightly dilated male tarsi are also precisely of the same form as in that genus. The truncature of the elytra is, however, more decided, and is slightly incurved, and the head forms a very distinct neck at its junction with the thorax. The marginal stria of the elytra is not continuous along the apical margin.

E. LATIPENNIS, Macleay, Trans. Ent. Soc. N.S.W., 1864, p. 108.

E. WATERHOUSEI, Casteln., l. c., p. 102.

EUDALIA MACLEAYI, n. sp.—*Nigro-æneus, subnitidus, palpis, mandibulis, antennarum articulis 3<sup>to</sup> et 4<sup>o</sup> basi pedibusque rufo-testaceis, geniculis obscuris; capite punctato, vertice lævi; thorace capite multo angustiori, grosse punctato, disco antice sublævi, oblongo, ante basin constricto; elytris latis, magnis, sub-quadratis, punctato-striatis, interstitiis sparsim punctatis, sternis abdominisque basi grosse punctatis.*

Long. 4 lin. ♂ ♀.

New South Wales. Received from W. McLeay, Jun., Esq., Sydney.

#### Genus AMPHITHASUS, g. n.

*Corpus glabrum, caput breviter ovatum, oculis haud exstantibus. Palpi elongati, graciles, breviter pubescentes, articulo ultimo angusto, apicem versus gradatim acuminato. Antennæ ab articulo 2<sup>ndo</sup> dense pubescentes. Thorax capite vix latior, cordatus. Elytra convexa, apice late obtuse truncata, stria marginali per apicem continuata, suprâ profunde punctato-striata, interstitiis lævibus. Pedes tenuiter, tarsi densius, pubescentes.*

In facies, the species on which this genus is founded greatly re-

sembles *Anchomenus albipes*. It is probable that *A. elegans*, Dej. (Sp., v, 725), belongs also to the genus; but *A. dimidiaticornis*, Dej., is most likely a small species of *Oxycrepis* (*Feroniinae*).

AMPHITHASUS TRUNCATUS, n. sp.—*Piceo-niger, glaber, epistomate, labro, palpis, pedibus, antennarumque articulis sex basalibus flavo-testaceis, 7—11 albis; capite lævi, oculis vix prominentibus; thorace capite cum oculis paulo latiori, elongato-cordato, postice modice haud abrupte coarctato, supra convexo, lævi, marginibus anticis et posticis grosse punctatis; elytris oblongis, apice late obtuse truncatis, valde convexis, profunde striatis, striis concinne regulariter punctatis, interstitiis impunctatis; abdomine rufo-piceo.*

Long.  $3\frac{1}{2}$  lin.; lat. elytr.  $1\frac{1}{2}$  lin.

Ega, Upper Amazons.\*

#### Genus ANCHONODERUS, Reiche.

Few modern genera have been introduced in a more confused manner than the present. It was placed near *Anchomenus* by its author, and the long definition omits its most distinguishing characters. The type species cited, *Platynus elegans* (Brullé), cannot be separated from *Lachnophorus*, and the second and third species quoted by the author flatly contradict his generic characters "*elytra apice rotundata, haud sinuosa, interstitiis granulatis,*" both those species being described by Dejean as having smooth interstices, and (at least, the first) sinuated elytra. The genus need not be withdrawn on account of the type belonging to a previously described and still maintained genus, as some of the species included in it (*binotatus, subæneus, rugatus, &c.*) form a well-defined group, distinguished from *Lachnophorus* by the much less prominent eyes, rounded apex of the elytra without trace of truncature, and by the less fusiform shape of the terminal joint of the palpi.

— ANCHONODERUS SUBTILIS, n. sp.—*A. subæneo* (Reiche) *similis, magis depressus, oculis majoribus, elytris minus profunde striatis. Piceo-niger, subnitidus; antennis rufo-testaceis, articulo basali, palpis, pedibusque flavo-testaceis; capite thorace latiori, supra lævi; oculis magnis; thorace cordato, postice minus quam in A. subæneo angustato, angulis posticis productis, supra subtilissime coriaceo; elytris parum convexis, haud profunde, acute striatis, striis vix punctulatis, interstitiis vix convexis, subtilissime confuse punctulatis, marginibus tenuiter rufescentibus.*

Long.  $3\frac{1}{2}$  lin.

Guatemala. One example in Mr. E. Brown's collection. In the finely-impressed and almost impunctate striae it agrees with *A. unicolor* of Chaudoir, which, however, has black legs. It has great general resemblance to the common *A. subæneus* of Columbia and Central America.

\* Except when otherwise stated, the new species are described from examples in my own collection.—H. W. B.

ANCHONODERUS SCABRICOLLIS, n. sp.—*Fusco-æneus, pilis longioribus vestitus, antennarum basi, palpis, pedibusque albo-testaceis; capite thorace paulo angustiori, suprâ passim haud profunde punctato; labro, antennis (basi albo excepto), mandibulisque rufo-piceis; thorace cordato, lateribus juxta angulos posticos rectis, suprâ grosse cicatricoso-punctato; elytris oblongo-ovatis, profunde crenato-striatis, interstitiis punctulatis leviterque plicatis, utrinque maculis 2 rufo-testaceis, quarum una curvata prope humerum, altera major ante apicem, aliquando usque ad apicem extensa, ornatis; corpore subtus nigro, nitido, punctato.*

Long.  $2\frac{2}{3}$  lin., ♂ ♀.

Apparently allied to *A. undatus*, Chaud., but much smaller; differs from *A. rugatus*, Reiche, by the colour of the antennæ and sculpture of the elytral interstices. The facies, sculpture, and pubescence would justify its being placed in *Lachnophorus*; but the head being narrower than the pro-thorax, and the eyes but moderately prominent, show its nearer affinity with *Anchonoderus*. The thorax is very much rounded on the sides, greatly and abruptly constricted at the base. The punctuation of the elytral striæ is coarse near the base, less distinct near the apex, and the punctures crenulate only the interstices on the outer side of each stria. The pale spots are variable in size, the apical one forms a waved macular band on interstices 3—9, but sometimes extends along the margin to the apex.

Rio Janeiro. Collected by the late Mr. Squires and Rev. Hamlet Clark. In my own collection and that of Mr. Grut.

Kentish Town: *June*, 1871.

## DESCRIPTIONS OF NEW SPECIES OF AFRICAN DIURNAL LEPIDOPTERA.

BY CHRISTOPHER WARD.

### PAPILIO CONSTANTINUS, n. s.

♂. *Upper-side*: rich brown-black, both wings crossed with a yellowish-white band, commencing midway at the inner margin of lower wing, and curving outwards to the apex of the upper wing. Through the lower wing this band is continuous; through the upper wing it is broken into spots, which spread inwards in a narrow, irregular band to the anterior margin. In the cell near the extremity an oval spot; following the outer edge of both wings is a series of yellowish-white spots, placed in pairs between the nervures. Tails rather short, spatulate, and marked on each side with yellowish-white.

*Under-side*: marked as above, but a lighter brown, and the lower wing is of a lighter shade than the upper one. Between the nervures of the lower wing, and near the apex of the upper wing, are strongly-defined streaks of dark brown.

Expanse  $3\frac{1}{2}$  inches.

*Habitat*: Ribé, East Africa.